

# MANAGING SOLID WASTE

November 1999

Volume 4 Number 1

## Indiana Composting Facilities: 1998 Update

This volume updates volume 3, number 2 of *Managing Solid Waste: Indiana Composting Facilities*. See that publication for a detailed summary and history of Indiana composting facilities from 1994 through 1997.

Composting allows for the reclamation and reuse of materials such as discarded vegetative matter that would otherwise end up at Indiana's landfills and incinerators. The Indiana Department of Environmental Management (IDEM) administers a registration and annual reporting program for facilities composting vegetative matter. Indiana composting facilities process between 200,000 and 250,000 tons of vegetative matter annually – mostly leaves, wood, and brush. About half the compost produced each year is given away by local governments as part of their reuse and recycling efforts.

This paper is the 10th in the series "Managing Solid Waste" by the IDEM Office of Land Quality. For more information, contact the Facility Data Analysis Section at (317) 233-3834. A copy of this paper can be downloaded at <http://www.state.in.us/idem/olq/>.

### INTRODUCTION

Composting is the transformation of vegetative matter and other organic materials into a humus (or compost) better suited as fertilizer than the original materials. The transformation is accomplished through natural biochemical processes. Composting is one of the main processes used to reclaim and reuse vegetative matter. Other processes include mulching and land application.

According to most recent U.S. Environmental Protection Agency statistics, yard wastes make up approximately 13% by weight of the municipal solid waste stream nationally. This includes mostly vegetative matter like leaves, brush, wood, and grass. The diversion of these materials from final disposal can increase the life of Indiana landfills. In addition, the re-use of discarded vegetative matter as either compost or mulch decreases the use of chemical fertilizers and other landscaping products that can have large negative environmental impacts.

As of November 1999, there are 80 registered composting facilities in Indiana. This is an increase from the 50 facilities registered in 1994, the first year registration was required, but a decrease from 81 registered facilities in 1998 (see Tables 1 and 1a). More than half of Indiana counties have at least one composting facility. It is important to note that several facilities were inactive at some point during the last five years.

1998 totals are listed separately from previous year totals because prior to 1998, facilities submitted receipt totals in volume units; beginning in 1998, facilities submitted all data in tons. Thus, 1998 and prior year figures are not comparable. Facilities receiving no materials in 1998 are not listed in Table 1.

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Written by: Richard Worth  
Data Development: Minerva Mercado-Feliciano

# Indiana Composting Facilities

Table 1. Tons of Total Materials Received by Indiana Composting Facilities in 1998		
County	Facility	Tons Received
Adams	Decatur Compost Facility	no report
Allen	Martin Composting	no report
Allen	National Serv-All Compost	3,509
Bartholomew	Columbus- Bartholomew Yard Waste Site	4,289
Cass	Cass Co. SW Composting Site	4,406
Clark	Clark County Compost	4,420
Clark	Koetter & Smith	1,995
Daviess	City of Washington Composting Facility	1,294
Daviess	Mulch Makers, Inc.	no report
De Kalb	Dekalb Co. Yard Waste Composting	2,312
Dearborn	Greendale Composting	949
Elkhart	City of Goshen Composting	no report
Elkhart	Elkhart Co. Landfill	125
Elkhart	Elkhart Environmental Center	6,155
Fayette	City of Connersville Compost Facility	no report
Floyd	Earth First of Kentuckiana Inc.	9,169
Fountain	Fountain Co. Recycling Station/Compost Site	4
Fountain	Harrison Steel Castings Compost Site	24
Grant	Gas City Composting	no report
Gibson	Princeton Compost	9,132
Hamilton	Creative Landscaping and Compost Co.	1,280
Hendricks	Plainfield Correctional Facility	3,880
Howard	City of Kokomo Yard Waste Composting	2,159
Huntington	City of Huntington Landfill Composting	1,968
Jackson	Seymour City Composting Facility	no report
Jefferson	City of Madison T.S.	63,000
Jefferson	Town of Hanover Composting Facility	18
Kosciusko	Superior Excavating	84
La Porte	Westville C.F. Compost Site	90
Lagrange	Lagrange Co. Yard Waste Composting	407
Lake	City of Gary Compost	6,509
Lake	Fertile Earth Gary Compost Facility	8,114
Lake	Greencycle of Indiana E. Chicago Facility	2,015
Lake	Munster Landfill	no report
Lake	Stuhlmacher Soil Service, Inc.	94
Lake	Town of Griffith Landfill	2,359
Lawrence	Lawrence County Compost	250
Madison	Pendleton CF Compost	1,287
Marion	Greencycle of Indiana	24,343
Marion	O.M. Scott & Sons	8,276
Marion	Southside Landfill	11,361
Marion	Town of Cumberland	343
Monroe	Good Earth Composting	445
Monroe	Topsoil Composting Service	no report
Morgan	Greendell Farm	no report
Newton	Newton County Development Landfill	370
Noble	Ligonier Compost	45
Porter	Crocker Composting Site	2,018
Porter	Portage Composting	2,981
Porter	Valparaiso Municipal Composting Site	4,669
Putnam	Putnamville Correctional Facility	292
Randolph	City of Winchester Compost	312
Randolph	Randolph Farms, Inc.	122
Shelby	Caldwell Landfill	1,882
St. Joseph	Household Hazardous Waste and Recycling Center	2,287
St. Joseph	Organic Resources	34,138
St. Joseph	Pioneer Southern Horticultural Products	82
Steuben	Steuben Co. Yard Waste Composting	1,943
Sullivan	Wabash Valley Correctional Facility	538
Tippecanoe	Purdue University	3,456
Tippecanoe	Tippecanoe Co. Compost Facility	400
Tipton	City of Tipton Composting Facility	2,444
Vanderburgh	Laubscher Meadows Composting Facility	898
Vigo	Victory Landfill	3,392
Vigo	White Violet Center	98
Washington	Washington Co. SWMD Composting	1,278
Whitley	City of Columbia Compost Facility	280

New Facilities Registered in 1999: Greencycle of Indiana (Boone Co.), Adams Compost Facility (Morgan Co.), and Velpen Construction/Demolition Landfill (Pike Co.).

Facilities closing in 1998: O.M. Scott & Sons (Marion Co.), closed 12/31/98.

# Indiana Composting Facilities

Table 1a. Cubic Yards of Materials Received by Indiana Composting Facilities 1994 - 1997

County	Name	1994	1995	1996	1997
Adams	Decatur Compost Facility	3,817	3,169	5,128	5,146
Allen	Allen Co. SWMD Composting Facility	not open	3,500	49,783	closed
Allen	National Serv-All Compost	2,184	479	21,676	74,470
Bartholomew	Columbus- Bartholomew Yard Waste Site	17,920	41,231	41,739	25,553
Cass	Cass Co. SW Composting Site	18,462	20,661	23,741	25,172
Clark	Clark County Compost	9,660	7,832	19,382	809
Daviess	City of Washington Composting Facility	6,070	12,628	8,820	6,863
De Kalb	Dekalb Co. Yard Waste Composting	7,509	7,928	11,188	16,086
Dearborn	Greendale Composting	1,903	2,025	1,970	4,882
Decatur	Decatur Hills Inc.	107	343	302	140
Dubois	Phoenix S. Mine	2,557	5,001	5,604	0
Elkhart	City of Goshen Composting	5,406	10,450	11,400	11,400
Elkhart	Elkhart Co. Landfill	1,456	2,219	1,155	1,344
Elkhart	Elkhart Environmental Center	43,200	42,570	42,550	42,550
Fayette	City of Connersville Compost Facility	11,010	10,550	2,470	2,300
Floyd	Earth First of Kentuckiana Inc.	66,430	77,826	75,218	79,296
Fountain	Fountain Co. Recycling Station/Compost Site	not open	not open	not open	16
Fulton	County Line Landfill	not open	9	closed	closed
Gibson	Princeton Compost	not open	not open	30,472	31,684
Grant	Circle "G" Grinding	0	0	n/a	0
Grant	Gas City Composting	not open	1,555	7,600	6,820
Hamilton	Creative Landscaping and Compost Co.	15,823	2,707	3,800	3,950
Hamilton	CSR American Aggregates Recycling and Organics	not open	3,657	closed	closed
Hancock	Caldwell Landfill	50	128	99	40
Howard	City of Kokomo Yard Waste Composting	23,275	35,465	22,477	56,012
Huntington	Huntington Composting	10,800	15,350	13,280	10,855
Jefferson	City of Madison T.S.	1,039	13,400	3,040	4,670
Jefferson	Town of Hanover Composting Facility	1,625	1,525	533	81,000
Kosciusko	Superior Excavating	33	130	210	255
La Porte	Material Recovery Solutions	not open	13,593	closed	closed
La Porte	Westville C.F. Compost Site	not open	not open	not open	300
Lagrange	LaGrange Co. Yard Waste Composting	2,882	778	3,832	4,230
Lake	City of Gary Compost	156,479	335,018	960,703	14,435
Lake	Fertile Earth Gary Compost Facility	not open	not open	not open	380
Lake	Greencycle of Indiana E. Chicago Facility	not open	8,393	24,665	9,336
Lake	Munster Landfill	not open	not open	200	0
Lake	Stuhlmacher Soil Service, Inc.	not open	300	320	325
Lake	Town of Griffith Landfill	7,688	4,287	8,293	10,535
Lawrence	Lawrence County Compost	not open	not open	not open	18,500
Marion	American Aggregates Composting Facility	not open	not open	39,402	closed
Marion	Greencycle of Indiana	16,827	29,335	82,298	68,939
Marion	O.M. Scott & Sons	171,830	1,809	35,588	40,888
Marion	Southside Landfill	11,352	43,794	16,758	13,365
Marion	Town of Cumberland	1,690	1,613	1,600	2,863
Monroe	Good Earth Composting	3,500	4,500	4,500	2,500
Monroe	Topsoil Composting Service	not open	8,950	n/a	n/a
Morgan	Greendell Farm	10,605	26,885	30,893	400
Newton	Newton County Development Landfill	not open	not open	not open	6,400
Noble	Ligonier Compost	not open	not open	not open	1,003
Porter	Crocker Composting Site	6,060	2,995	4,190	4,581
Porter	Portage Composting	4,440	12,261	11,769	10,805
Porter	Valparaiso Municipal Composting Site	10,638	16,707	20,295	26,162
Putnam	Putnamville Correctional Facility	444	416	384	360
Randolph	City of Winchester Compost	3,500	622	800	1,130
Randolph	Randolph Farms, Inc.	1,347	10,589	11,127	2,432
Shelby	Caldwell Landfill	6,491	8,024	5,787	7,347
St. Joseph	Household Hazardous Waste and Recycling Center	176,813	126,820	106,756	n/a
St. Joseph	Organic Resources	125,717	135,537	213,436	189,515
St. Joseph	Pioneer Southern Horticultural Products	not open	not open	not open	840
Steuben	Steuben Co. Yard Waste Composting	2,452	1,722	9,150	13,947
Sullivan	Wabash Valley Correctional Facility	not open	not open	not open	20
Tippecanoe	Purdue University	23,120	28,800	31,000	35,648
Tippecanoe	Tippecanoe Co. Compost Facility	not open	318	7,255	6,287
Tipton	City of Tipton Composting Facility	12,470	16,571	14,246	11,992
Vanderburgh	Laubscher Meadows Composting Facility	25,963	48,853	6,995	7,343
Vigo	Terre Haute Street Department	260,720	0	0	0
Vigo	Victory Landfill	44,515	20,353	20,815	18,185
Vigo	White Violet Center	not open	not open	not open	360
Washington	Washington Co. SWMD Composting	1,210	8,753	11,400	11,400
Wells	Mossburg Enterprises Composting Facility	2,972	n/a	3,185	closed
Whitley	City of Columbia Compost Facility	1,800	1,850	2,145	2,610

# Indiana Composting Facilities

## REGULATORY AND OPERATION REQUIREMENTS

In 1992, the Indiana Legislature approved Public Law 84, now codified as IC 13-20-9. This law includes a restriction on disposal of vegetative matter. The ban applies to residential, commercial, and industrial sources. IDEM has issued guidance to interpret what materials are subject to the ban. (See Table 2. More information regarding the yard waste ban appears in the nonrule policy document "Important Notice Regarding the Yard Waste Disposal Ban," available from IDEM's Office of Land Quality.) This ban makes composting facilities an essential facet of solid waste management.

Table 2. Summary of Indiana's Yard Waste Ban

Materials SUBJECT to Yard Waste Disposal Ban	<ul style="list-style-type: none"><li>• leaves</li><li>• brush</li><li>• woody vegetative matter greater than 3 feet in length</li></ul>
Materials EXEMPT from Yard Waste Disposal Ban	<ul style="list-style-type: none"><li>• grass</li><li>• woody vegetative matter bagged, bundled, or otherwise contained and less than 3 feet in length</li><li>• very small amounts of vegetative matter bagged, bundled, or otherwise contained and less than 3 feet in length AND combined with other solid waste</li><li>• Christmas trees</li><li>• house plants</li><li>• vegetable food scraps</li><li>• vegetative by-products not derived from landscaping maintenance or land clearing projects such as from flower shops and funeral homes</li><li>• IDEM-approved composted vegetative matter used as cover material for a solid waste landfill</li></ul>

Composting facilities are required by state law to register with IDEM. Each registration is valid for

five years, and can be renewed by submitting an updated registration form to IDEM 90 days prior to expiration.

There is no fee for registration or renewal. Composting operations that process less than 2,000 pounds of vegetative matter during a year are exempt from these registration requirements.

In addition to the registration requirements, the law requires that the facility operator submit an annual report to IDEM. The Composting Facility Annual Report indicates the amount of vegetative matter processed during the previous year, and the final use of the compost. The first reporting year was 1994.

## MATERIALS PROCESSED

The 81 facilities active in 1998 accepted approximately 250,000 tons of organic materials. This amount is an approximation for three reasons:

1. Beginning in 1998, composting facilities are required to report their intake in tons. Many facilities do not have weigh scales, and must convert volume measurements to weight based on conversion factors such as those in Table 3. Volume-to-weight conversion factors vary widely depending on the composition, moisture content, and compaction rate of the vegetative matter.
2. Ten facilities did not fulfill their legal requirement to submit reports for 1998. These were assumed to have had no materials processed for the year, which results in an understatement of compost received shown here by the amount of any materials received but not reported by these facilities.
3. Some loads of materials are received in a manner that prohibits documentation by type and/or weight, especially small loads from

# Indiana Composting Facilities

residential customers. On average, 37% of facilities receive undocumented loads. In 1998, 25 of 81 facilities or 31% received undocumented loads (these totals may be understated if non-reporting facilities received undocumented loads).

As shown in Figures 1 and 2, leaves account for a significant portion of total receipts. Other materials received at composting facilities were wood, brush, grass, straw, food waste, manure and sludge.

Table 3. Examples of Conversion Factors for Compostable Materials (Cubic Yards Per Ton)

Material Description	Loose	Compacted
brush	6.67	2.20
brush, shredded	5.37	--
cardboard	6.67	--
food waste	1.30	--
grass	5.00	2.50
leaves	10.00	5.00
leaves, shredded	6.70	5.71
mixed yard waste, fall	8.10	3.60
mixed yard waste, summer,	5.70	2.60
paper	4.00	--
whole wood	7.14	5.88
wood, chipped	4.00	3.60

## FINAL USES OF COMPOST AND OTHER PRODUCTS

Composting facilities may produce finished compost in as short as three months or as long as two years, depending on the type of raw materials, ambient temperature, and processing methods. At the end of 1998, 46% of the materials managed by Indiana registered composting facilities were still in the process of being converted to compost. Over

Figure 1. Estimated Tons Received by Composting Facilities, Converted from Reported Volume Units

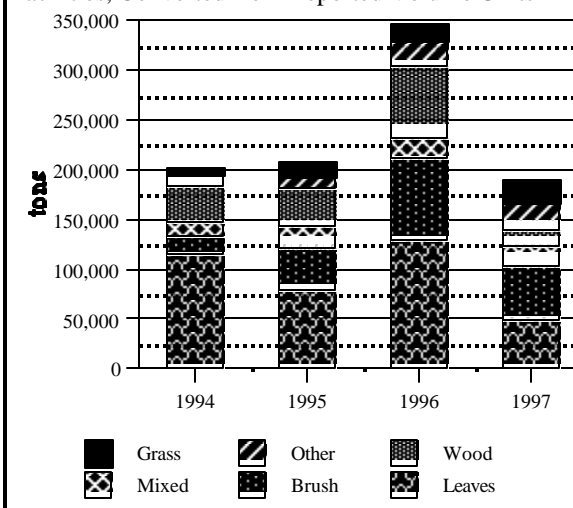
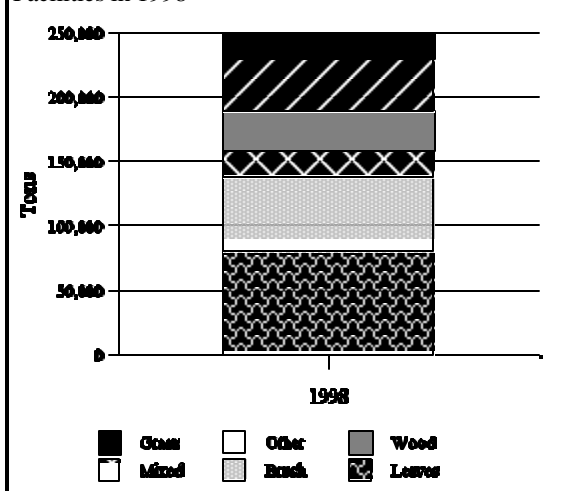


Figure 2. Estimated Tons Received by Composting Facilities in 1998

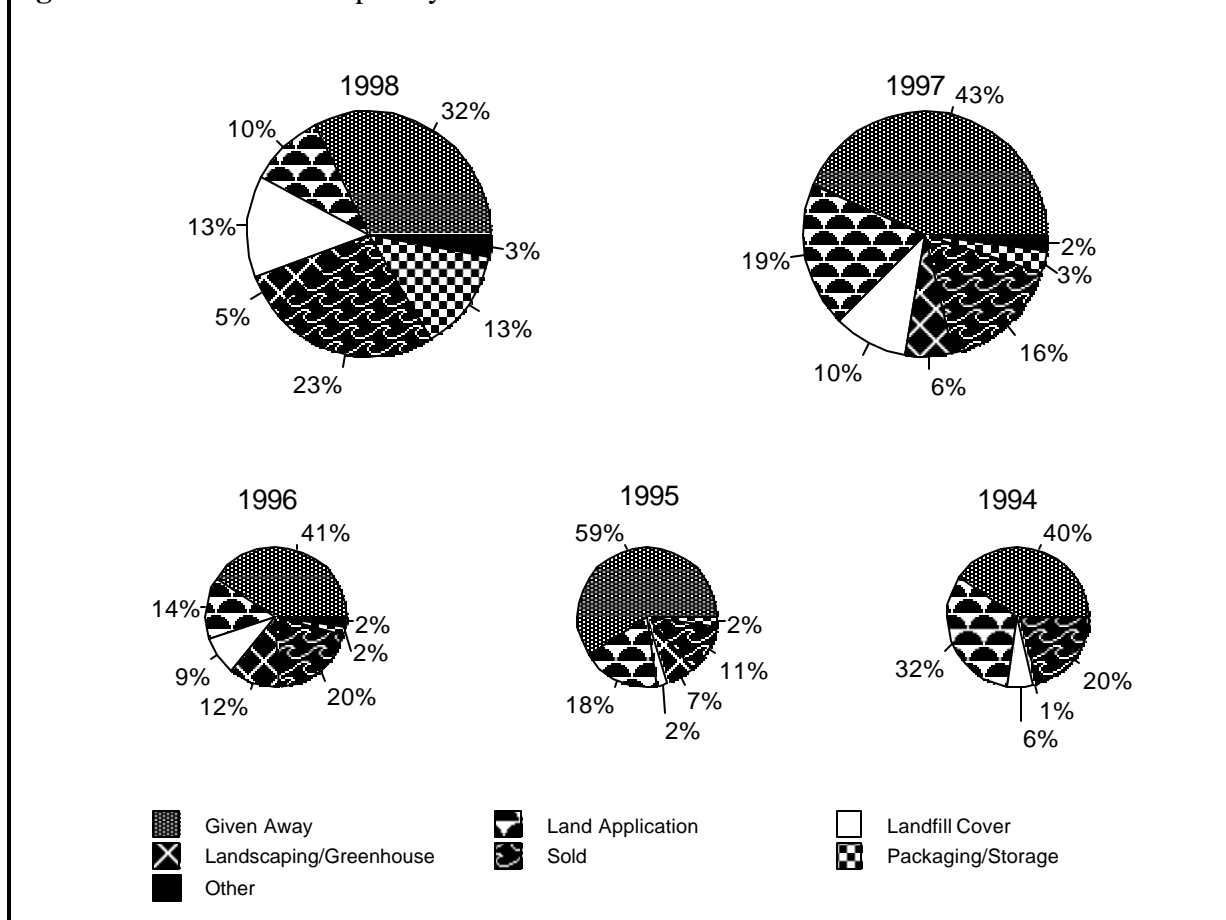


the last five years, materials received and still in process of being converted to compost at year end ranged from 36% to 50%.

Figure 3 shows the final uses of the materials that were successfully converted into either compost or mulch during the last five years. In 1998, facilities gave away 32% of total converted product, a decrease from amounts given away in previous years. Facilities giving away product are primarily those run by cities, counties, or solid waste management districts.

# Indiana Composting Facilities

**Figure 3** Final Uses of Compost by Percent



## REFERENCES AND FURTHER READING

Indiana Department of Environmental Management and the Indiana Recycling Coalition, *Indiana Yard Waste Solutions*; January 1993

U.S. Environmental Protection Agency, Office of Solid Waste and Emergency Response, *Characterization of MSW in the United States: 1997 Update*; May 1998